WISCONSIN ENDANGERED RESOURCES REPORT #131
STATUS OF THE AMERICAN MARTEN IN WISCONSIN
PERFORMANCE REPORT, 1 JULY 2004 THROUGH 30 JUNE 2005
By Adrian P. Wydeven and Jane E. Wiedenhoeft

SUMMARY

A total of 19 marten were detected along 144 miles of survey routes in the Chequamegon-Nicolet National Forest. Surveys were only completed in the Nicolet portion of the study area. Other marten survey work with trapping and radio telemetry were completed in both study areas. A hair trap study with genetic testing of samples showed good promise for determining marten distribution. A draft of a new marten management plan for the state was developed. Educational posters and power point presentations were developed.

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Job 106.2.1 Monitor Population
Job 106.2.2 Determine Recovery Levels
Job 106.2.3 Enhance Population
Job 106.2.4 Communications

Background: American marten (*Martes americana*), also known as pine marten, were listed as state endangered in 1972. Between 1975-1983, 172 martens were released in northern Forest County in the Nicolet National Forest of northeast Wisconsin. Between 1987-1990, 139 marten were reintroduced into the Clam Lake area of Ashland County in the Chequamegon National Forest in northwest Wisconsin. Marten were released into Fisher Management Units, where fisher (Martes pennanti) were reintroduced in the 1950's and the 1960's. These management units were closed to all terrestrial trapping of furbearers and have been re-designated as Marten Restoration Areas (MRA). The MRA's cover 344 mi^2 in the Clam Lake area of northwest Wisconsin and 188 mi^2 in northeast Wisconsin. Standardized track surveys were initiated in 1987 in the Nicolet National Forest, and in 1991 in the Chequamegon National Forest.

A recovery plan was developed for the American (pine) marten in Wisconsin in 1986. The 4 jobs listed in this report represent main strategies for recovering marten populations in Wisconsin. This report covers recovery activities conducted from 1 July 2004 through 30 June 2005.

JOB 106.2.1 MONITOR POPULATION

Three routes of about 25-30 miles each were established in the two MRA's. Plus two additional routes have been run in the Nicolet location, and a new route was established in the Chequamegon site during the 2003-2004 study period. Routes were followed slowly with four-wheel drive vehicles >8 and < 24 hours after a fresh snowfall (Ashbrenner 1994). Tracks of individual marten, other carnivores and porcupines were recorded along each route.

Additional monitoring/ research activity on American martens included live-trapping/radio tracking studies in the Nicolet National Forest by the Wisconsin DNR and University of Wisconsin- Stevens Point (Woodford et al. 2005), radio-telemetry monitoring by Great Lakes Indian Fish and Wildlife Commission of martens north of Clam Lake (Gilbert et al. 2003), and interagency study of marten distribution using hair traps and genetic sampling.

Results and Discussion

Nineteen marten were detected along 144.3 miles surveyed in the Nicolet National Forest (Table 1). A total of 16 marten were detected along 3 routes in the MRA, covering 81.2 miles, or a rate of 19.7 marten per 100 miles. Detection rates along the 63.1 miles driven outside the MRA was 4.8 per 100 miles, but actually marten were detected only on a 6.7 mile route, that was located directly north of the MRA. Within the MRA, marten rate of detection was slightly less than 2003-2004 (24.7 / 100 miles), but close to the long-term average. Ratio of fisher detection to marten was 2.9: 1 in the MRA. Rate for coyote, bobcat, and wolf detection in the Nicolet were the highest recorded in recent years, but wolf occurrence in this area is still much lower than northwest Wisconsin.

No surveys were conducted in the Chequamegon National Forest. Data from previous years are shown in table 2.

Ongoing research on martens continued to be done by the Great Lakes Indian Fish and Wildlife Commission, and the Forest Service on marten ecology in portions of the MRA in the Chequamegon National Forest (Gilbert et al. 2003). Additionally in winter 2004-2005, GLIFWC, USFS, and DNR cooperated in a marten hair snare study to test for marten presence with DNA across extensive areas of the Great Divide District of the Chequamegon, and northern and central portions of the Nicolet. Along 11 transacts sampled, DNA of marten was found along all the routes. This technique has promise of being able to better determine distribution of martens in the state. Results of the marten hair snare study will be reported elsewhere.

DNR and University of Wisconsin-Stevens Point also cooperated on a research project on marten in northeast Wisconsin, including live-capture, radio tracking, and assessment of dispersal habitat. In fall 2004, 17 marten were captured 40 times, and 11 were fitted with radio collars. Details of the research were reported elsewhere (Woodford et al 2005).

JOB 106.2.2 DETERMINE RECOVERY LEVELS

Graduate student Sarah Harvey of Miami University, Ohio developed a draft plan with input from the Wisconsin marten committee for future management of marten in the state (Harvey 2005). The plan will eventually be used to direct research and monitoring efforts. The Wisconsin Marten committee is still working at finalizing the plan.

The Wisconsin marten committee met on 27 May 2005 to discuss and plan marten management. James Woodford discussed live-trapping and telemetry research for the Nicolet National Forest. Pat Zollner discussed results from hair trap surveys and genetic testing. Jon Gilbert discussed marten research in the Clam Lake area. The whole committee discussed the draft management plan and recommended modifications. Additional potential sites for marten reintroduction may be recommended.

Members of the marten committee also met on 25 March 2005 in Rhinelander to discuss results of hair traps and genetic sampling research, and met on 12 April 2005 to develop a marten research proposal for State Wildlife Grants (it was not funded).

JOB 106.2.3 ENHANCE POPULATION

Need for future and additional marten reintroduction will be discussed within the new management plan for marten. Ongoing monitoring and research will provide additional data on need for further re-introductions. A possible strategy to increase marten abundance may include reduction of fisher populations in portions or all of one of the MRAs to enhance marten abundance.

JOB 106.2.4 COMMUNICATION

American marten surveys were published in the Wisconsin Wildlife Surveys (Wydeven and Wiedenhoeft 2004), and marten observations were reported in that report in "Rare Mammal Observations" (Wiedenhoeft and Wydeven 2005). Marten status and ecology information was included at talks to volunteer trackers at 3 training courses for 80 people.

Various work on marten educational efforts were also conducted by Sarah Harvey as part of her Master of Science program through Miami University in Oxford, Ohio (Harvey 2004). Sarah prepared 200 marten educational posters that were distributed to biologists, foresters, educators, and members of the general public for distribution from northern Wisconsin DNR and Forest Service offices. She developed a power point presentation on a CD as a training tool for foresters and wildlife biologists for recognizing marten habitat and means to protect and enhance habitat by timber sales. The CD will eventually be made available to county, industrial foresters, and others. The Wisconsin DNR website on marten was also updated by Sarah during the study period.

Acknowledgement

Persons who assisted on marten surveys included Jim Woodford, Pat Coffen, Amber Roth, Bruce Kohn and other WDNR personnel. Federal Pittman-Robertson funds and Wisconsin Endangered Resources funds were used to support marten surveys. Other marten survey work was done by Jon Gilbert, Dan Eklund, Pat Zollner, Sarah Harvey, Tim White, Kevin Russell and other employees of the Great Lakes Indian Fish and Wildlife Commission, U.S. Forest Service, and University Wisconsin –Stevens Point.

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Table 1. *Mammal track observations along marten survey routes in the Nicolet National Forest, winter 2004-2005.*

Date	Route No.	Snow Depth (in)	Miles Run	Number of Tracks Observed				
				Marten	Fisher	Coyote	Bobcat	Other
02/09/05	1	15"	29.7	9	24	33	6	7 Otter 3 Dog 5 Fox 2 Wolf 3 Porcupine 2 Raccoon
12/28/04	2	11"	22.8	5	9	12	1	2 Mink 2 Otter 5 Weasel 1 Dog 2 Wolf 2 Porcupine
01/07/05	3	9"	28.7	2	13	22	3	2 Mink 2 Otter 1 Dog 2 Fox
02/15/05	4	13"	28.6	0	12	18	0	1 Bear 1 Porcupine 1 Raccoon
03/02/05	5	17"	15.5	0	5	12	1	2 Dog 1 Porcupine
03/08/05	6A	18"	2.5	0	2	3	0	1 Weasel
03/08/05	6B	18"	6.7	3	5	5	0	1 Mink
03/08/05	7A	19"	9.8	0	9	7	1	1 Otter 2 Porcupine
Totals			**144.3**	**19**	**79**	**112**	**12**	**5 Mink** **12 Otter** **6 Weasel** **7 Dog** **7 Fox** **4 Wolf** **1 Bear** **9 Porcupine** **3 Raccoon**
Rate per 100 mi (1-3)			(81.2)	19.7	56.7	82.5	12.3	4.9 Mink 13.5 Otter 6.2 Weasel 6.2 Dog 8.6 Fox 4.9 Wolf 6.2 Porcupine 2.5 Raccoon

Table 1. *Continued.*

Date	Miles Run	Number of Tracks Observed				
		Marten	Fisher	Coyote	Bobcat	Other
2003-2004	(81.1)	24.7	45.6	49.3	8.6	4.9 Otter 12.3 Dog 2.5 Fox 2.5 Porcupine 1.2 Raccoon
2002-2003	(79.5)	11.3	71.7	65.4	7.5	5.0 Otter 1.3 Dog 7.5 Fox 2.5 Wolf 2.5 Porcupine
2001-2002	(123.4)	11.3	51.9	77.0	12.2	2.4 Otter 3.2 Dog 10.5 Fox 4.9 Porcupine
2000-2001	(79.1)	25.3	58.2	49.3	8.8	1.3 Otter 7.6 Fox 3.8 Porcupine
1999-2000	(80.9)	12.4	23.5	32.1	2.5	4.9 Otter 1.2 Dog 3.7 Fox 3.7 Porcupine
1998-1999	(79.4)	23.9	27.7	27.7	5.0	6.3 Otter 3.8 Fox
1997-1998	(84.1)	11.9	26.2	41.6	2.4	3.6 Otter 2.4 Fox 3.6 Porcupine
1996-1997	(76.2)	13.8	37.9	36.8	5.7	2.3 Otter 4.6 Fox 2.3 Porcupine

Table 2. *Mammal track observations along marten survey routes near Clam Lake in the Chequamegon National Forest, winter 1996-2005.*

Winter	Routes	Miles Run	Rate per 100 mi. Marten	Fisher	Coyote	Bobcat	Other
2004-2005	None						
2003-2004	1-2	51.2	13.7	43.0	21.5	7.8	9.8 Otter 33.2 Fox 17.6 Wolf 3.9 Porcupine
2002-2003	1	59.7	1.7	13.4	16.8	5.0	13.4 Otter 6.7 Fox 3.4 Wolf 1.7 Porcupine
2001-2002	2-3	45.2	11.1	48.7	13.3	11.1	2.2 Dog 35.4 Fox 28.8 Wolf 2.2 Porcupine
2000-2001	1 & 3	94.4	19.1 (10.2)	59.6	11.7	6.4	6.4 Mink 1.1 Badger 8.5 Otter 19.1 Fox 21.3 Wolf 1.1 Porcupine
1999-2000	1-3	58.3	20.6	70.3	41.2	12.0	3.4 Mink 18.9 Otter 5.1 Dog 22.3 Fox 8.6 Wolf 3.4 Porcupine
1998-1999	None						
1997-1998	1-3	72.6	9.7	41.4	17.2	1.4	2.8 Dog 30.4 Fox 9.7 Wolf 1.4 Porcupine
1996-1997	1-3	76.2	17.1	56.4	10.5	2.6	1.4 Otter 23.2 Fox 7.1 Wolf 2.8 Porcupine

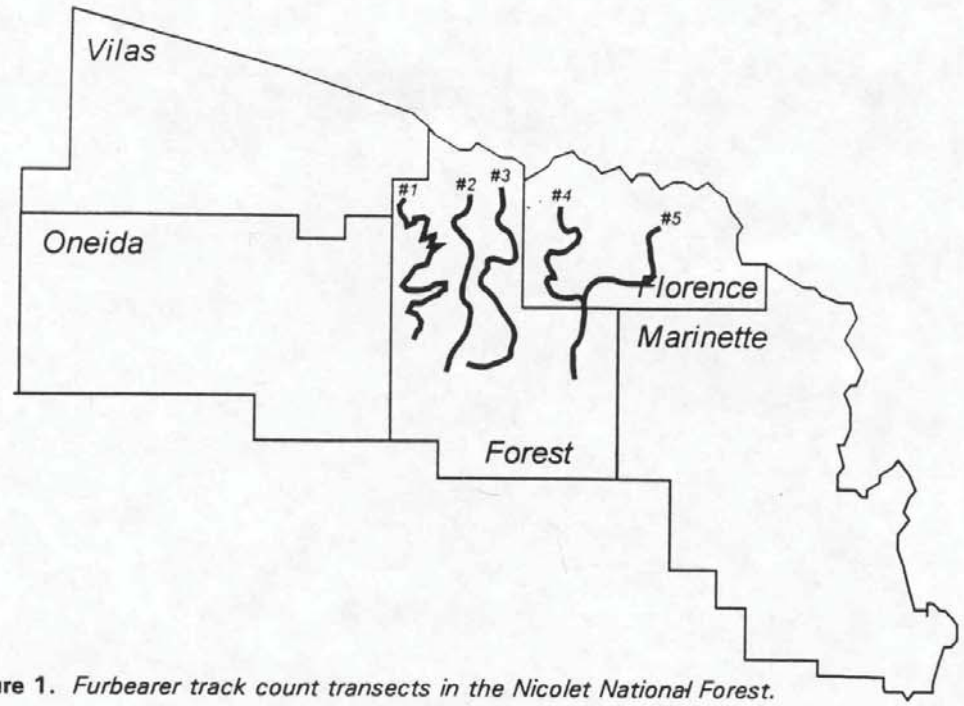

Figure 1. *Furbearer track count transects in the Nicolet National Forest.*

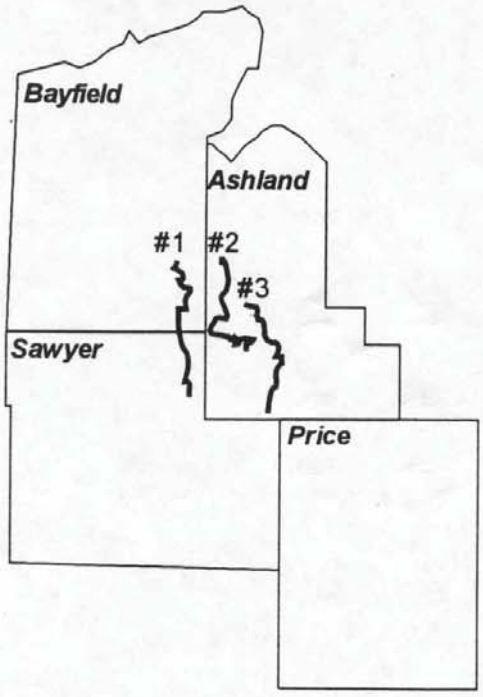

Figure 2. *Furbearer track count transects in the Chequamegon National Forest.*

Figure 3. *Core range of American marten in Wisconsin, 2000-2004 (from Woodford 2005).*